

SEQUENCE LISTING

<110> Amano Enzyme, Inc.

<120> NOVEL ENZYME COMPOSITION AND PRODUCTION METHOD AND USE THEREOF

<130> Q63731

<150> JP 10-294675

<151> 1998-09-30

<160> 16

<170> PatentIn version 3.0

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<212> PRT

<213> Aspergillus fumigatus

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Leu Ser Ser Ile Ala Ala
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<211> 22

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<213> Aspergillus fumigatus

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Seq
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ctgtccggtg acccagccta cactgtacgat gacaatggtg ggaaagcgga tccgtcactg 360
tcgggattca acctggggga ccgcggaacg gctatggcca agatgttggc aacaatgaag 420
tctctgcagc ccaacctcaa gatcctcggc tctccctgga gtgcaccagg atggatgaag 480
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~~Glu Ser Thr Trp Gln Leu Thr Val Asp Asp Thr Ser Ser Gly His Lys~~
 35 40 45

Gln	Thr	Ile	Val	Gly	Phe	Gly	Ala	Ala	Val	Thr	Asp	Ala	Thr	Val	Thr	50	55	60
Ser	Phe	Asn	Thr	Leu	Ser	Ala	Ser	Val	Leu	Gln	Asp	Leu	Leu	Asn	Lys	65	70	75
Leu	Met	Thr	Pro	Ala	Gly	Ala	Asn	Phe	Ala	Leu	Met	Arg	His	Thr	Ile	85	90	95
Gly	Ala	Ser	Asp	Leu	Ser	Gly	Asp	Pro	Ala	Tyr	Thr	Tyr	Asp	Asp	Asn	100	105	110
Gly	Gly	Lys	Ala	Asp	Pro	Ser	Leu	Ser	Gly	Phe	Asn	Leu	Gly	Asp	Arg	115	120	125
Gly	Thr	Ala	Met	Ala	Lys	Met	Leu	Ala	Thr	Met	Lys	Ser	Leu	Gln	Pro	130	135	140
Asn	Leu	Lys	Ile	Leu	Gly	Ser	Pro	Trp	Ser	Ala	Pro	Gly	Trp	Met	Lys	145	150	155
Leu	Asn	Gly	Val	Leu	Asp	Gly	Asn	Thr	Asn	Asn	Asn	Asn	Leu	Asn	Asp	165	170	175
Gly	Tyr	Leu	Thr	Ser	Gly	Gly	Thr	Gly	Ser	Thr	Gly	Tyr	Ala	Ser	Gln	180	185	190
Phe	Ala	Gln	Tyr	Phe	Val	Lys	Tyr	Ile	Gln	Ala	Tyr	Lys	Asn	Leu	Gly	195	200	205
Ala	His	Val	Asp	Ala	Ile	Thr	Ile	Gln	Asn	Glu	Pro	Leu	Phe	Ser	Ser	210	215	220
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Ile	Gln	Asn	Tyr	Ile	Gly	Pro	Ala	Leu	Ala	Ser	Ala	Gly	Leu	Asp	Thr	245	250	255
Glu	Ile	Trp	Ala	Tyr	Asp	His	Asn	Thr	Asp	Val	Pro	Ser	Tyr	Pro	Gln	260	265	270
Thr	Val	Leu	Asn	Gln	Ala	Gly	Gln	Tyr	Val	Lys	Ser	Val	Ala	Trp	His	275	280	285
Cys	Tyr	Ala	Pro	Asn	Val	Asp	Trp	Thr	Val	Leu	Ser	Gln	Phe	His	Asn	290	295	300
Thr	Asn	Pro	Gly	Val	Lys	Gln	Tyr	Met	Thr	Glu	Cys	Trp	Thr	Pro	Ala	305	310	315
Ser	Gly	Ala	Trp	His	Gln	Ala	Ala	Asp	Phe	Thr	Met	Gly	Pro	Leu	Gln	325	330	335
Asn	Trp	Ala	Ser	Gly	Val	Ala	Ala	Trp	Thr	Leu	Gly	Thr	Asn	Ala	Gln	340	345	350
Asp	Gly	Pro	His	Leu	Ser	Thr	Gly	Gly	Cys	Ala	Thr	Cys	Gln	Gly	Leu	355	360	365

Asp 60	Ala	Thr	Val	Thr	Ser 65	Phe	Asn	Thr	Leu	Ser 70	Ala	Ser	Val	Leu	Gln 75	
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gcg Ala	ggg Gly	cta Leu 255	gat Asp	acg Thr	gaa Glu	atc Ile	tgg Trp	gct Ala 260	tat Tyr	gac Asp	cac His	aac Asn	aca Thr 265	gat Asp	gtc Val	920
ccg Pro	tcg Ser	tac Tyr 270	ccc Pro	cag Gln	act Thr	gtc Val	ctt Leu 275	aac Asn	cag Gln	gcc Ala	ggt Gly	cag Gln 280	tac Tyr	gtc Val	aag Lys	968
tcg Ser	gtg Val 285	gcc Ala	tgg Trp	cac His	tgc Cys	tac Tyr 290	gct Ala	ccc Pro	aac Asn	gtc Val	gac Asp 295	tgg Trp	acc Thr	gtg Val	ctc Leu	1016
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Cys	Trp	Thr	Pro	Ala	Ser	Gly	Ala	Trp	His	Gln	Ala	Ala	Asp	Phe	Thr	
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Lys	Ser	Gly	Gln	Lys	Trp	Ser	Gly	Asn	Ala	Pro	Ser	Gln	Ser	Val	Thr	
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Thr	Trp	Val	Leu	Pro	Ser	Ala										
460					465											
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10

Ser Ala Gly Asn Tyr Lys Leu Ser Ser Ile Ala Ala Pro Val Gln Gly
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Ala Gly Asn Pro Gly Ser Glu Ser Thr Trp Gln Leu Thr Val Asp Asp
30 35 40

Thr Ser Ser Gly His Lys Gln Thr Ile Val Gly Phe Gly Ala Ala Val
45 50 55

Thr Asp Ala Thr Val Thr Ser Phe Asn Thr Leu Ser Ala Ser Val Leu
60 65 70

Gln Asp Leu Leu Asn Lys Leu Met Thr Pro Ala Gly Ala Asn Phe Ala
75 80 85 90

Leu Met Arg His Thr Ile Gly Ala Ser Asp Leu Ser Gly Asp Pro Ala
95 100 105

Tyr Thr Tyr Asp Asp Asn Gly Gly Lys Ala Asp Pro Ser Leu Ser Gly
110 115 120

Phe Asn Leu Gly Asp Arg Gly Thr Ala Met Ala Lys Met Leu Ala Thr
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Met Lys Ser Leu Gln Pro Asn Leu Lys Ile Leu Gly Ser Pro Trp Ser
140 145 150

Ala Pro Gly Trp Met Lys Leu Asn Gly Val Leu Asp Gly Asn Thr Asn
155 160 165 170

Asn Asn Asn Leu Asn Asp Gly Tyr Leu Thr Ser Gly Gly Thr Gly Ser
175 180 185

Thr Gly Tyr Ala Ser Gln Phe Ala Gln Tyr Phe Val Lys Tyr Ile Gln
190 195 200

Ala Tyr Lys Asn Leu Gly Ala His Val Asp Ala Ile Thr Ile Gln Asn
205 210 215

Glu Pro Leu Phe Ser Ser Ala Gly Tyr Pro Thr Met Tyr Val Tyr Asp
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Tyr Glu Ser Ala Gln Leu Ile Gln Asn Tyr Ile Gly Pro Ala Leu Ala

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Ser Ala Gly Leu Asp Thr Glu Ile Trp Ala Tyr Asp His Asn Thr Asp	255		260		265	
Val Pro Ser Tyr Pro Gln Thr Val Leu Asn Gln Ala Gly Gln Tyr Val	270		275		280	
Lys Ser Val Ala Trp His Cys Tyr Ala Pro Asn Val Asp Trp Thr Val	285		290		295	
Leu Ser Gln Phe His Asn Thr Asn Pro Gly Val Lys Gln Tyr Met Thr	300		305		310	
Glu Cys Trp Thr Pro Ala Ser Gly Ala Trp His Gln Ala Ala Asp Phe	315		320		325	330
Thr Met Gly Pro Leu Gln Asn Trp Ala Ser Gly Val Ala Ala Trp Thr	335		340		345	
Leu Gly Thr Asn Ala Gln Asp Gly Pro His Leu Ser Thr Gly Gly Cys	350		355		360	
Ala Thr Cys Gln Gly Leu Val Thr Ile Asn Asn Gly Gly Tyr Thr Leu	365		370		375	
Asn Thr Ala Tyr Tyr Met Met Ala Gln Phe Ser Lys Phe Met Pro Pro	380		385		390	
Gly Ala Ile Val Leu Asn Gly Ser Gly Ser Tyr Thr Tyr Ser Gly Gly	395		400		405	410
Gly Gly Ile Gln Ser Val Ala Ser Leu Asn Pro Asp Gly Thr Arg Thr	415		420		425	
Val Val Ile Glu Asn Thr Phe Gly Asn Asp Val Tyr Val Thr Val Thr	430		435		440	
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